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PROVISIONAL SPECIFICATION.

"Improvements in or relating to Photographic Film Cartridges".

(A communication from WILLIAM B. CLINE, of Rochester, in the County of Monroe, New York, United States of America).

We, KODAK LIMITED, of 43 Clerkenwell Road, in the County of London, do hereby declare the nature of this invention to be as follows:—

This invention relates to photographic film cartridges and has for its object to facilitate their handling during the process of development.

5 Photographic film cartridges as at present in use comprise a roll holder upon which is wound a strip of opaque paper or similar material which envelopes the film strip, the film and paper being connected together in some suitable manner only at what may be termed the outer or commencing end so as to cause the two to travel together and be wound on to the receiving spool.

10 According to this invention in addition to this connection between the film and paper strip at the commencing end a similar connection is made at the other end of the film so that the film and paper strip can be drawn together off the spool upon which they have been wound after the exposures have been made. This arrangement is particularly intended for use in developing machines, the
15 end of the paper strip being utilised to draw the film off the spool and immerse it in the developing bath, the film and paper being according to this invention always ready for manipulation in this manner.

The connection between the inner end of the exposed film and the covering paper may be by way of a strip of paper or suitable material provided with a
20 coating of dried adhesive such as gum or cement and the film and backing strip may be connected by this adhesive flap before the film is wound on the spool ready for use or the connection may be left to be made by the user before the film is inserted in the developing machine.

The connecting strip may be attached either to the film or to the paper back-
25 ing and may either itself carry the adhesive or this may be applied to either the film or the backing. The connection may be such that the film and paper strip will not become separated while in the developing machine though in some cases if the parts do become separated after the film has once been wound upon the holder in the machine this separation will not signify.

30 Dated this 11th day of February 1903.

BOULT, WADE & KILBURN
Agents for the Applicant.

COMPLETE SPECIFICATION.

"Improvements in or relating to Photographic Film Cartridges."

35 (A communication from WILLIAM B. CLINE, of Rochester, in the County of Monroe, State of New York, United States of America.)

We, KODAK LIMITED, of 43, Clerkenwell Road, in the City of London, do hereby declare the nature of this invention and in what manner the same is to

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be performed to be particularly described and ascertained in and by the following statement:—

This invention relates to photographic film cartridges and has for its object to facilitate their handling during the process of development.

Photographic film cartridges as at present in use comprise a roll-holder upon which is wound a strip of opaque paper or similar material which envelopes the film strip, the film and paper being connected together in some suitable manner only at what may be termed the outer or commencing end, so as to cause the two to travel together and be wound on to the receiving spool.

According to this invention, in addition to this connection between the film and paper strip at the commencing end, a similar connection is made at the other end of the film so that the film and paper strip can be drawn together off the spool upon which they have been wound after the exposures have been made. This arrangement is particularly intended for use in developing machines, the end of the paper strip being utilised to draw the film off the spool and immerse it in the developing bath, the film and paper being according to this invention always ready for manipulation in this manner.

The connection between the inner end of the exposed film and the covering paper may be by way of a strip of paper or suitable material provided with a coating of dried adhesive such as gum or cement and the film and backing strip may be connected by this adhesive flap before the film is wound on the spool ready for use or the connection may be left to be made by the user before the film is inserted in the developing machines.

The connecting strip may be attached either to the film or to the paper backing and may either itself carry the adhesive or this may be applied to either the film or the backing. The connection may be such that the film and paper strip will not become separated while in the developing machine though in some cases if the parts do become separated after the film has once been wound upon the holder in the machine this separation will not signify.

Referring to the drawings:—

Figure 1 is a perspective view of the preferred form of film cartridge constructed in accordance with this invention, the film and cover being unrolled.

Figure 2 is a perspective view to a larger scale of the exposed cartridge with a portion of the cover strip unwound.

Figure 3 is a diagrammatic sectional view of a developing machine, showing the manner of using the improved cartridge.

As shown in Figure 1 the end of the backing-strip B extends beyond the end of the film A. The film is connected to the backing-strip by a piece or strip C which may be provided with adhesive.

This connection at the forward or drawing end is the usual connection and does not form part of this invention, and the forward end of the film may be secured in any other appropriate manner.

The rear end of the film A is not permanently connected to the backing-strip B in order that wrinkling of the film by the backing strip may be prevented when being wound forward in the camera or roll-holder. There is provided, however, a strip or securing piece D which may be of paper or other light flexible material and can readily be attached to the backing-strip by the holder when the film is to be moved by drawing upon the rear end of the cover or backing-strip.

Preferably the underside of this attaching piece D has a coating of dried adhesive material such as gum or cement which may be moistened and pressed down on the cover B to secure it.

It is desirable that the strip D be of sufficient length to project from the rolled cartridge so that it may be secured in daylight and without unrolling the exposed film, as shown in Figure 2. The cartridges are adapted for use in any form of developing apparatus in which the film is unwound from the spool by tension on the covering paper, and in Figure 3 is illustrated diagrammatically

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a form of apparatus in which the cartridge may be employed. In this figure the cartridge is shown wound on a spool E' as it is removed from the camera and in this developing machine the inner end B of the backing-strip B being removed from the spool E is secured to a spool F within the machine and the film being now secured to the backing-strip by the piece D is unwound by rotating the spool F and supported on the apron G.

The developing machine shown in Fig: 3 is similar to that described in the Specification of British Letters Patent No: 21243 dated 24th October 1899 but it is not intended to limit the invention to this or to any particular developing machine, apparatus or bath.

Instead of securing the film to the rear end of the backing-strip by the piece D adhesive material may be applied directly to the backing strip so that after exposure when the film is unwound from the spool E the end may be secured directly to the backing strip or any other ready means for securing the rear end of the film to the backing strip may be employed, but the use of the piece D affords a simple and cheap method and as it is only necessary in some forms of developing apparatus to cause the film and paper to be drawn upon the apron properly in the first instance it is immaterial whether or not the film end becomes unfastened by the dissolving of the adhesive material.

Having now particularly described and ascertained the nature of the said invention, as communicated to us by our foreign correspondent, and in what manner the same is to be performed, we declare that what we claim is:—

1. A photographic film cartridge embodying a strip of flexible film and a covering strip of opaque flexible material extending beyond the ends of the film (and wound with it into a coil), one end of the film being attached to the covering material and a means for connecting the other end of the film to the covering material, said means being arranged on one of the parts and capable of ready attachment to the other.

2. A photographic film cartridge embodying a strip of flexible film and a covering strip of opaque flexible material extending beyond the ends of the film and wound with it into a coil, one end of the film being attached to the covering material and a strip for connecting the other end of the film to the covering material having dried adhesive material thereon and connected to one of the parts

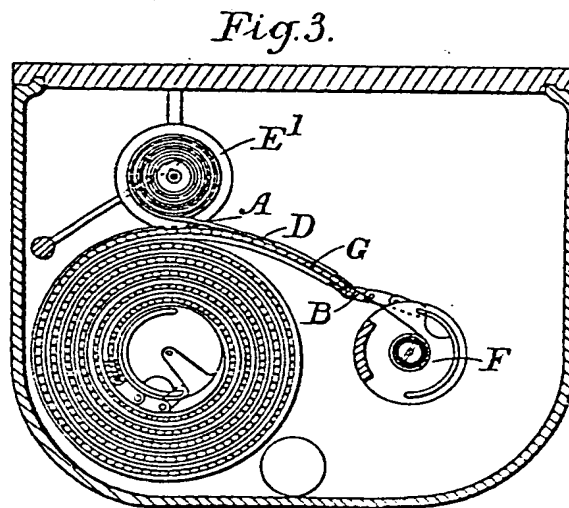
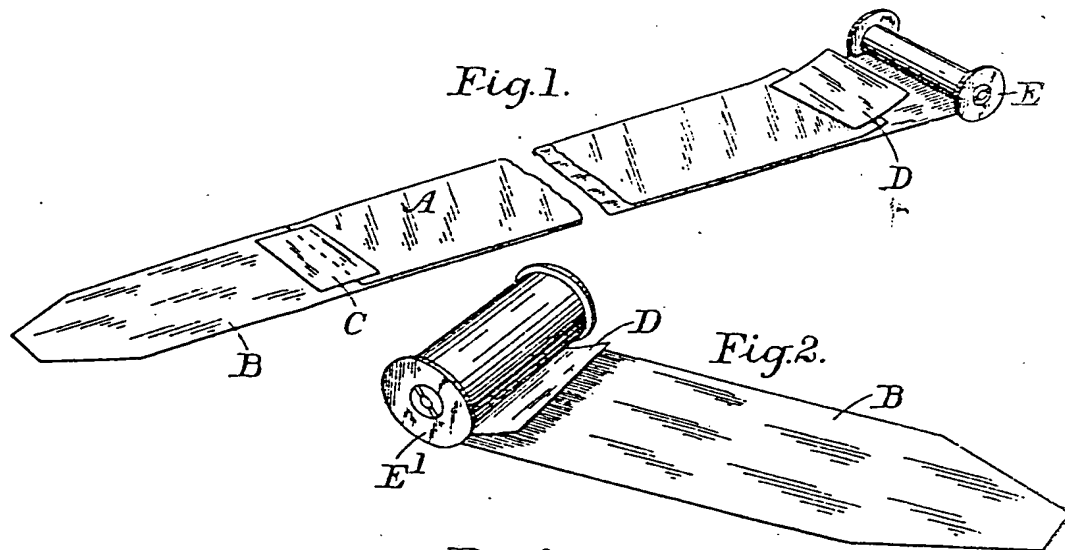
3. A photographic film cartridge embodying a strip of flexible film and a covering strip of opaque flexible material extending beyond the ends of the film and wound with it into a coil, one end of the film being attached to the covering material and a strip attached to and extending beyond the other end of the film and adapted for attachment to the covering material.

4. A photographic film cartridge embodying a strip of flexible film and a covering strip of opaque flexible material extending beyond the ends of the film and wound with it into a coil, one end of the film being connected to the covering material and a strip attached to and extending beyond the other end of the film and provided with dried adhesive material thereon.

Dated this 11th day of Nov 1903.

BOULT, WADE & KILBURN
Agents for the Applicants.

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[This Drawing is a reproduction of the Original on a reduced scale.]